Pest Alert

United States
Department of
Agriculture

Forest Service

Northeastern Area

NA-PR-01

Premature Needle Loss of Spruce

Figure 1. Branch mortality on white spruce.

Figure 2. Browning needles of black spruce.

Premature needle loss on white, black and Norway spruce has been observed in forest plantations in Wisconsin and Minnesota during the past six years. Symptoms vary by species but usually appear first in 2-4-year old needles on lower branches. Infected needles are dropped, resulting in branch mortality that progresses upward through the crown, sometimes killing even large, dominant trees. Several insects and fungi, as well as abiotic stresses such as drought and poor soils, appear to contribute to the damage. The fungus *Rhizosphaera kalkhoffii* is the only organism that has, been consistently associated with needle loss. *R. kalkhoffii* is commonly found on ornamental blue spruce throughout Minnesota and Wisconsin.

Figure 3. Discoloration of older needles of Norway spruce.

Watch for: Needles turning prematurely yellow and finally brown; small black fruiting bodies of *R. kalkhoffii*, which emerge in rows through the stomata; excessive lower branch mortality; and thin crowns.

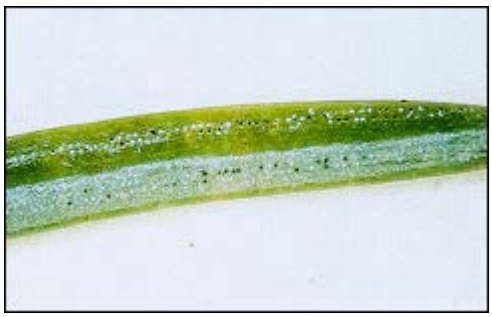

Figure 4. Fruiting bodies on attached needle of Norway spruce.

Forest Service plant pathologists are examining this disease and evaluating possible control measures. You can help us to delineate the extent of the

problem by reporting any suspected occurrences of this syndrome on spruce other than Colorado blue spruce, which is habitually infected.

To report infected stands or to receive further information, please contact:

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